CERF 2015 Seagrass Sessions

1. Lead Convener

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2. Other Conveners

2a. Functions

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2c. Seagrass mapping and remote sensing (abundance)

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2d. Restoration

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3. Workshop, oral session or poster session?

The proposed session is for four combined oral/poster sessions under the special session Estuaries Under Threat with a linked workshop on Seagrass Mapping and Remote Sensing. It is preferred that the sessions occur during the morning sessions on two consecutive days.

4. Title

Seagrass Ecosystems: challenges in evaluating function, health, abundance and restoration

5. Proposal

It has been demonstrated that seagrasses are one of the most valuable nearshore habitats throughout the world. However, coastal environments, in particular seagrass systems, are directly in the cross-hairs for elimination. Therefore, the assessment of seagrass systems over varying spatial and temporal scales is critical but also challenging. Research needs to effectively evaluate seagrass functions, health, and distribution and abundance to guide management and policy, while seagrass restoration needs to be successful and resilient in a dynamic climate. The session encourages presentations on the assessment of seagrass functions, health, monitoring and restoration that utilize innovative methods in a dynamic environment.

LONG DESCRIPTION

It has been demonstrated that seagrasses are one of the most valuable nearshore habitats throughout the world. However, coastal and estuarine environments where seagrass systems exist are increasingly threatened by natural and economically driven forces (e.g., development, anthropogenic pollution, aquaculture, invasive species). Therefore, accurate and cost effective assessment of seagrass systems over varying spatial and temporal scales is critical but has its challenges. Research needs to effectively evaluate seagrass functions, health, and distribution and abundance in a way that informs management and policy about the ecological and economic effects of seagrass ecosystem loss and alteration. Furthermore, seagrass restoration needs to be successful and resilient in an ever changing climate.

This proposal is for a four-part combined oral and poster series of sessions on seagrass functions, health, mapping and monitoring, and restoration. In addition to the four sessions, a linked workshop titled "Remotely Mapping Areal and Depth Distributions of Estuarine/Near-Coastal SAV" will be organized by David Young and co-conveners.

The proposed sessions and workshop include:

- Seagrass Functions: Community assessment and interactions (Session 1)
- Seagrass Health: Physiological changes due to environmental pressures (Session 2)
- Seagrass Mapping and Monitoring: Large-scale and long-term optimization (Session 3)
- Seagrass Restoration: Techniques for success and resilience (Session 4)
- Remotely Mapping Areal and Depth Distributions of Estuarine/Near-Coastal SAV (Workshop)

The Seagrass Functions session will encourage presenters to address community diversity and interactions within and between habitats. Presentations on the assessment and comparison of functional equivalency between seagrass and other natural (e.g., unvegetated areas, macroalgae beds, or coral and oyster reefs) or human manipulated habitats (e.g., aquaculture) are encouraged. Other topics of interest include presentations that address the ability of seagrasses to regulate ocean conditions (e.g., acidification, wave energy, disease) and how seagrass can contribute to Blue Carbon reserves. The Seagrass Health session solicits research that focuses on how seagrass health is measured in a constantly changing environment. The session is looking for research that highlights robust, cost-effective metrics that are easily replicated and interpreted. Additionally, work evaluating multiple or interactive stressors is encouraged.

In the third session, Seagrass Mapping and Monitoring, presenters will focus on robust and technologically advanced methods that assess the abundance and distribution of seagrasses across a range of spatial and temporal scales. Session four, Seagrass Restoration, will highlight innovative seagrass restoration techniques, such as incorporation of genetics or site selection models, that have been successful and could show resilience to climate change. It is encouraged that all presenters discuss the strengths and weaknesses of their research, address potential controversies to associated

proposed paradigms, and how their results inform potential management decisions and policy changes. For all sessions, students and young researchers are strongly encouraged to present and will be given priority for oral presentations.

6. Keywords

Seagrass, habitat, health, mapping, restoration, ocean acidification, blue carbon,

7. Potential Invited presenters

Seagrass Functions

- Masahiro Nakaoka (Seabee)
- Kun-Seop Lee (Pusan University, Korea)
- Ken Heck – Dauphin Island Sea Lab
- Steve Rumrill – Oregon Department of Fish and Wildlife
- Dick Zimmerman, Old Dominion University, Norfolk, VA
- Micah Horwith, WA State Department of Natural Resources
- Brigitta van Tussenbroek - Mexico
- Brett Dumbuald (USDA) and students
- Jen Ruesink and students
- Tony D'Andrea, ODFW
- Emmet Duffy/Kevin Hovel – ZEN program coordinators
- Fiona Tomas-Nash

Seagrass Health

- Ken Moore (USA)
- Fourqurean
- Marianne Holmer/ Birgit Olesen
- Susana Enriquez - Mexico
- Jessie Jarvis – James Cook University
- Tim Sherman – Univ S. Alabama
- Ken Dunton – Univ of Texas
- Di Walker/ Keirn Kilminster- Australia
- Hessing-Lewis – Canada
- Fiona Tomas Nash - Spain

Seagrass mapping and remote sensing

- Andrew Ryan and Peter Markos – WA State DNR
- Suzanne Shull – Padilla Bay NERR
- Mark Finkbeiner – NOAA Coastal Services Center, SC
- Paul Carlson – FL Fish and Wildlife Research Institute
- Dave Wilcox – Virginia Institute of Marine Sciences, VA
- Fred Short, University of New Hampshire, NH
- Mark Sabol, USGS, Vicksburg, MS
- Stewart Schultz, Croatia

Seagrass Restoration

Kate Buenau, Pacific Northwest National Laboratory, Sequim, WA
Bob Orth, Virginia Institute of Marine Science, VA
Alexandra Cunha, University of the Algarve, Portugal
Just Cebrian – Dauphin Island Sea Lab